



Uniflair TDWV-TUWV

Direct Expansion water-cooled units with backward-curved fans equipped with EC motor
20-100 kW



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Schneider Electric: Your Partner in Sustainable Data Center Cooling

At Schneider Electric, we are committed to providing innovative and sustainable solutions that help organizations reduce their environmental impact and operational costs.

Our Uniflair Room Cooling units are designed with eco-efficiency in mind, utilizing advanced technologies to minimize energy consumption while maintaining peak performance.

Uniflair Water-Cooled Room Cooling

Direct expansion water-cooled units with backward-curved fans equipped with EC motor

TDWV - TUWV

Cooling capacity: 20 ÷ 100 kW

R410A refrigerant

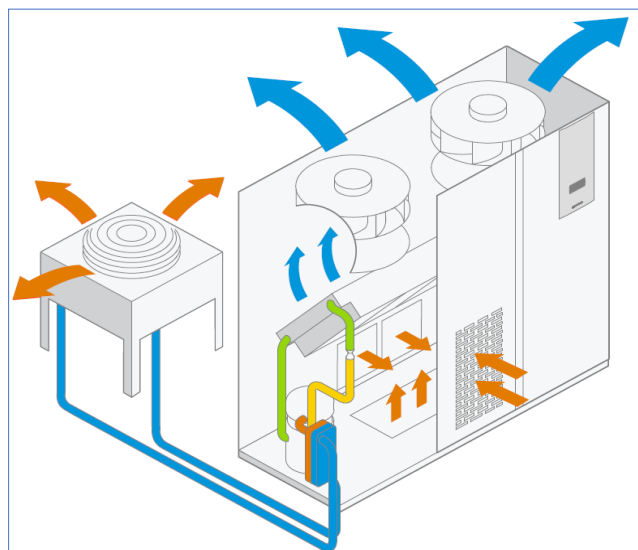


Heat extracted from the room is transferred to water via stainless steel brazed-plate heat exchangers

Cooling water may be fed from the mains supply (where permitted), a cooling tower or a well (i.e. open circuit), or circulated in a closed loop cooled by external dry-coolers

Refrigerant circuits pre-charged and sealed in the factory

No need for site-installed refrigerant pipeworks



System Architecture

Main features

Air filters

- Standard high efficiency EU4-pleated air filters housed in a metal frame
- Dirty filter differential pressure switch
- Low airflow differential pressure switch

Cooling coil

- Heat exchanger coils designed for high sensible heat ratio (SHR) and reduced pressure drops
- Made from copper tubes mechanically expanded on aluminum fins, hydrophilic coated

Fixed speed scroll compressor

- Possibility to select units with two tandem compressors for each circuit (models with the **21 or **42 suffix)
- Better efficiency and regulation capacity at partial loads

Electronically Commuted fans

- High-tech compound material impellers with optimized flow control
- High efficiency EC motors
- Low power consumption
- High part-load efficiency
- Fan speed regulation by Modbus signal
- Regulate airflow based on actual thermal load
- Easy serviceability with quick removal kit

Structure and cabinet

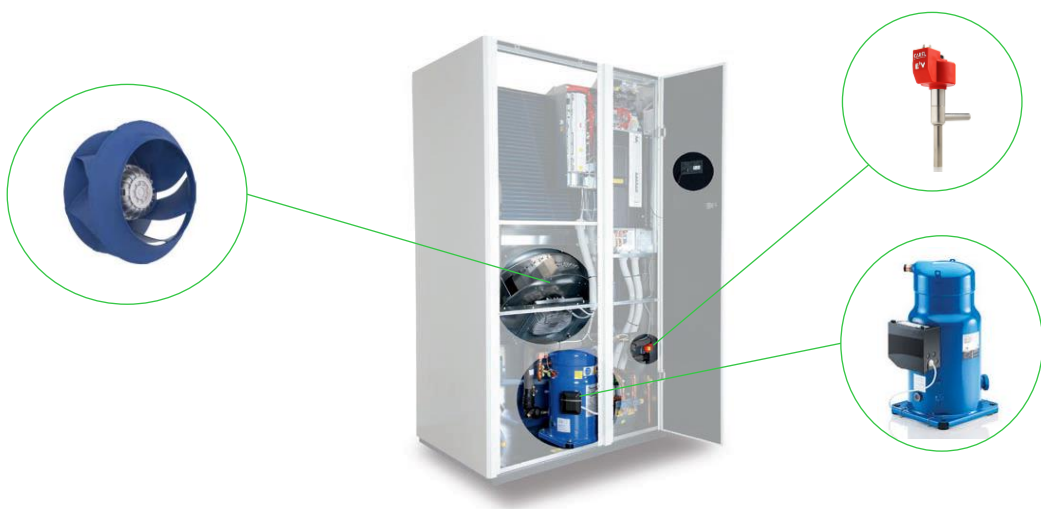
- Self-supporting frame in galvanized steel with panels
- External panels coated with RAL9003 epoxy-polyester paint
- Internally lined with heat and sound-proofing insulation

Advanced controller

- Local or remote user terminal
- Integrated management of the Electronic Expansion Valve and refrigerating circuit parameters
- Integrated LAN card for group connection• Rotation and active stand-by management
- Remote on/off
- Modbus protocol interface
- Other external communication protocols: Bacnet, Trend, Metasys, TCP/IP, SNMP, and ecoStruxure platform.

Water cooled direct expansion

- Heat is extracted from the room and transferred to the outside air using water-cooled heat exchangers (condensers)
- Internal brazed water-cooled condenser, made from AISI 304 steel
- A wide range of configurations available



System Architecture

Main configurable options

Construction options

- Immersed electrode humidifier (D/U versions)
- Low surface temperature electrical heaters with extended fans, complete with double safety thermostat and manual resetting (T/H versions)
- Total front access is available for unit maintenance.
- The electrical panel is situated in a compartment separated from the airflow
- Microprocessor control system includes:
 - Integrated management of the EEV and refrigerating circuit parameters
 - Local user terminal with external accessibility
 - Integrated LAN card for local network connection of a group of CRACs
 - Rotation and active stand-by management
 - Free contact for general and two for addressable alarms
 - Remote on/off switch
 - Advanced microprocessor control system is available with local or remote user terminal

Additional accessories

The units can be supplied with the following external accessories:

- Remote, semi-graphic user terminal
- RS485 serial adapter to communicate with external BMS
- TCP/IP serial adapter to communicate with external BMS managed with SNMP protocol
- AFPS that can be adapted as a kit with installation instructions
- Motorized damper
- Condensate drain pump
- Suction from the top or front discharge plenums
- Adjustable floor stands

Regulations

Uniflair Room Cooling comply with the following directives:

- Machinery Directive 2006/42/EC (MD)
- Ecodesign and Energy Labelling 2009/125/EC
- Electromagnetic compatibility Directive 2014/30/EU (EMC)
- Pressure equipment Directive 2014/68/EU (PED)
- Regulation (EU) No 517/2014 on fluorinated greenhouse gases (F-GAS).



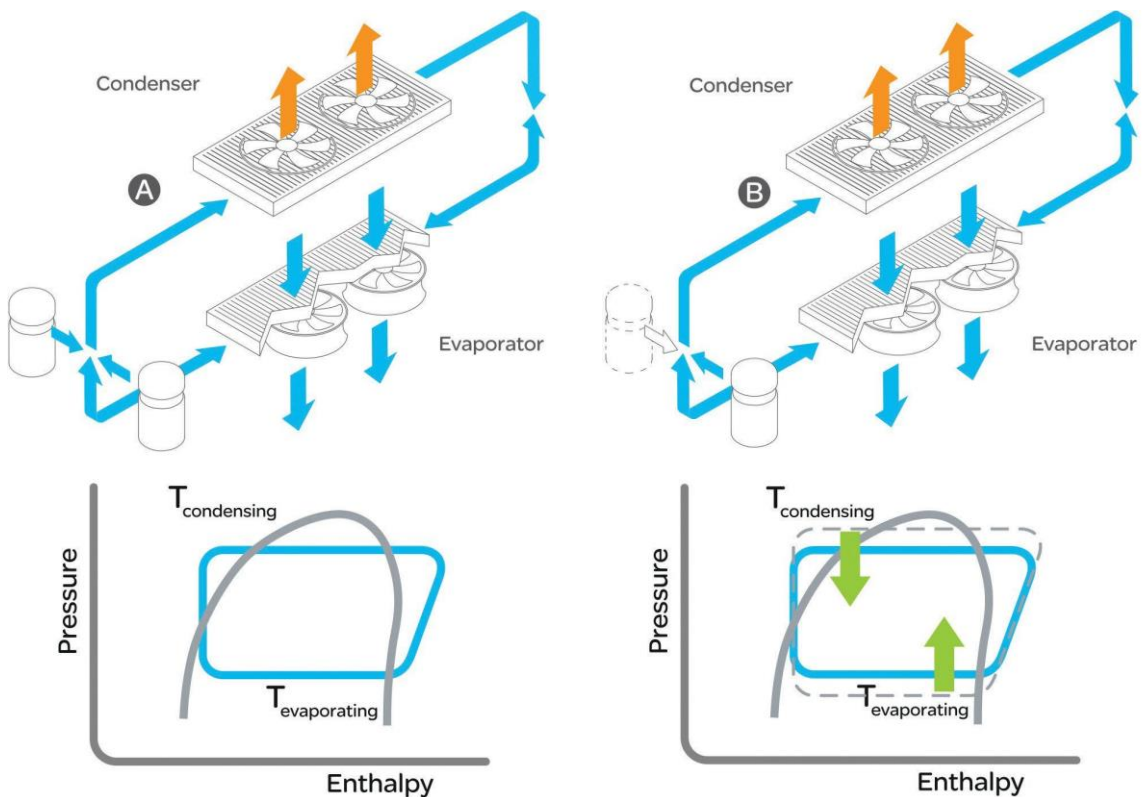
Tandem operation

Main features

In many applications the room load can vary enormously during the course of a single day or from season to season. This will cause wide variations in the amount of cooling required at any given moment. In these circumstances it is very important to use precision air conditioning units that are highly energy efficient at part load.

Uniflair Room Cooling models (with suffix **21) are equipped with two compressors operating in parallel on the same circuit in order to offer two stages of cooling on a single circuit of refrigeration.

As the evaporator coil surface area (designed for the capacity of two compressors) is fixed, one single compressor in operation (Fig. B) benefits from the availability of a “double sized” evaporator coil. This maximization of the cooling effect leads to increases in part load efficiencies and a rise in the part load coefficient of performance (COP).



Uniflair Water-cooled TDWV-TUWV

Technical Data¹

TDWV models		0611A	0921A	1321A	1622A	1822A	2242A*	2542A*	2842A*	3342A*
Fan type		EC backward-curved centrifugal motor fan								
Power supply	V/ph/Hz	400 V / 3ph / 50 Hz								
Fans	nr.	1	1	2	2	2	3	3	3	3
Air flow	m3/h	5700	8600	12320	16000	16000	21500	21500	21500	21500
N° of compressors	nr.	1	2	2	2	2	4	4	4	4
Refrigerating circuits	nr.	1	1	1	2	2	2	2	2	2
Gross total cooling capacity	kW	24,0	32,5	45,6	56,8	62,5	85,8	92,4	99,7	110,8
Gross sensible cooling capacity	kW	21,4	28,7	38,2	54,5	55,4	81,9	83	89	91

Dimensions		0611A	0921A	1321A	1622A	1822A	2242A	2542A	2842A	3342A
Height	mm	1960	1960	1960	1960	1960	2175	2175	2175	2175
Length	mm	1010	1310	1720	2171	2171	2580	2580	2580	2580
Depth	mm	750	865	865	865	865	750	865	865	865

* Units manufactured only in Zhuhai plant (China)

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Depth	mm	750	865	865	865	865	865	865	865	865

1: Data refer to nominal conditions Room at 24°C – 50% RH, water temperature 30-35°C, ESP 20 Pa

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To learn more about Uniflair Room Cooling Solutions contact your Schneider Electric representative or visit se.com/cooling

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